Standards and Interfaces (Near-Term Missions)

Purpose of Study

- Consider ESE's near-term systematic measurement missions.
- Recommend science data, metadata, and interoperability standards for application.
- Incorporate advice and experience of mission science community in making recommendations.

Schedule

Task initiation	09/10/01
Survey Mission Concepts	10/15/01
Survey Existing Standards	11/15/01
Survey System Interfaces	12/15/01
Draft Recommendations	02/28/02
Detailed Recommendations	05/30/02
Augmentation	07/30/02
Transition to LT Standards	09/30/02

Approach

- Survey standards:
  - Survey missions to understand goals and heritage.
  - Detail requirements and policies that drive standards in EOSDIS and other relevant data systems.
  - Assess general applicability, benefits and costs.
  - Assess role of standards in mission heritage data production and distribution systems.
- Critique applicability to particular missions:
  - Suggest use of appropriate standards and interfaces, or
  - Document unique requirements, design decisions or policies that dictate deviation from standards.

Status (02/05/02)

- Study has completed surveys of missions and data standards associated with respective heritage.
- Present survey draft is on web site.
- Draft recommendations will be focused at this workshop.

Discussion of Purpose

→ Consider ESE's near-term systematic measurement missions.

- These standards are for missions that have the primary purpose of providing high quality and routine data to answer the ESE's set of Earth Systems Science questions.

→ Recommend science data, metadata, and interoperability standards for application to missions.

- Standard will directly impact ability to achieve the specific mission science requirements. (mission)
- Standard will benefit interoperability among NASA's Earth remote sensing data in the NewDISS era and enables synergistic use of data within the ESE. (science)
- Standard lowers the barriers for others outside the ESE scientific community to use NASA's data. (applications)

Discussion of Purpose

→ Incorporate advice and experience of mission science community in making recommendations.

- Participants of this workshop can help
  - Looking for feedback on ideas we have gathered in our surveys
  - Looking for ways to verify insights
  - Looking for leads for further discussion with community.

SEEDS NTMS Preliminary Findings

→ Concepts from EOSDIS / ECS that apply:

- Standard Products
  - **But** - care must be exercised in assigning what products must be standard. EOS implementation was flawed.
- Standard Format for Standards Products
  - **But** - standards are a **process**, not a **product**. The implementation using ECS was flawed.
- The Idea of Standard Formats to Support Standard Services
  - **But** - same as above.
- A Comprehensive Data Model
  - **But** - NASA implementing organization needs to take responsibility for teaching, enforcing, evolving. Again a **process** not a **product**.
- Standard Documentation of Data Sets
  - **But** - publication of data set guides must be made more relevant to author's goals.

SEEDS NTMS Preliminary Findings

→ Other findings :

- Standards are required at the interface, not necessary to impose for internal transactions.
  - Multiple distribution formats are welcomed by community.
  - Conversions among standards must be enabled.
  - NASA near-term systematic measurement missions are converging on HDF as data format of choice. Multiple profiles may be required.
- Community Based Standards
  - Difficult, contentious, extremely time in-efficient, inconsistent results, necessary.
- Very difficult to find definitive lessons learned around standards.
  - Even in a single experience, different actors draw different, sometime contradictory lessons.

SEEDS NTMS Preliminary Findings

→ Other findings :

- For metadata:
  - FGCD content is minimal requirement.
  - A large heritage base of metadata using ECS data model exists.
  - There is consensus that evolution to XML is the next step.
  - GCMD as a directory standard is well regarded.
  - Guide documents standard is generally adequate.

Survey Results

The following preliminary results are available from the SEEDS web page.

→ Two summary tables

- Survey of near term missions
- Survey of standards